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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/538,224	03/30/2000	Douglas D. McGhan	71493-690	8770

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EXAMINER

LEUNG, CHRISTINA Y

ART UNIT	PAPER NUMBER
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2633

DATE MAILED: 04/08/2004

4

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/538,224

Applicant(s)

MCGHAN ET AL.

Examiner

Christina Y. Leung

Art Unit

2633

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 10 October 2003.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-22 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 1-19, 21 and 22 is/are allowed.
- 6) ☒ Claim(s) 20 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 30 March 2000 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Election/Restrictions

1. Applicants' election of Embodiment 1, corresponding to claims 1-7, 15, 16, and 19, in addition to generic claims 20-22 in Paper No. 3 is acknowledged. Because Applicants did not distinctly and specifically point out the supposed errors in the restriction requirement, the election has been treated as an election without traverse (MPEP § 818.03(a)). Although Applicants submitted that Examiner's original suggestion of claims directed to each embodiment was incorrect, they did not point out supposed errors in the requirement to make an election of species itself. Examiner notes that Examiner generally agrees with Applicants' identification of the claims corresponding to the elected embodiment.
2. However, claim 21 is generic and allowable. Accordingly, the restriction requirement as to the encompassed species is hereby withdrawn and claims 8-14, 17, and 18, directed to the species of Embodiment 2, are no longer withdrawn from consideration since all of the claims to this species depend from or otherwise include each of the limitations of an allowed generic claim.

In view of the above noted withdrawal of the restriction requirement as to the linked species, Applicants are advised that if any claim(s) depending from or including all the limitations of the allowable generic linking claim(s) be presented in a continuation or divisional application, such claims may be subject to provisional statutory and/or nonstatutory double patenting rejections over the claims of the instant application. Once a restriction requirement is withdrawn, the provisions of 35 U.S.C. 121 are no longer applicable. See *In re Ziegler*, 44 F.2d 1211, 1215, 170 USPQ 129, 131-32 (CCPA 1971). See also MPEP § 804.01.

Drawings

3. The drawings are objected to because elements in the figures should have descriptive as well as numeric labels. Specifically, elements 21, 22, and 23 in Figure 2 are currently only represented as blank boxes and should include descriptive labels. A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claim 20 is rejected under 35 U.S.C. 103(a) as being unpatentable over Walker et al. (US 6,023,362 A) in view of Kosaka (US 5,675,432 A).

Regarding claim 20, Walker et al. disclose an externally modulated optical transmitter (Figure 1).comprising a continuous wave (CW) laser 42 (column 2, lines 57-60), an optical amplifier 45 positioned after the laser and an external modulator 44 positioned after the amplifier (column 2, lines 44-46).

Walker et al. do not specifically disclose that the optical amplifier may be a semiconductor optical amplifier or that its gain is adjustable per se, although they do disclose analyzing the effects of different gains in order to select an optimal gain value for the amplifier to provide a desired carrier-to-noise ratio in the system (column 3, lines 44-67; column 4, lines 25-67).

Kosaka teaches an optical transmitter system related to the one disclosed by Walker et al. including an optical amplifier (Figure 2). Kosaka further teaches that the optical amplifier may be an semiconductor optical amplifier (column 5, lines 20-21), and that its gain may be adjustable.

It would have been obvious to a person of ordinary skill in the art to allow the gain of the amplifier disclosed by Walker et al. to be adjustable as taught by Kosaka in order to provide flexibility in the system and allow users to readily adjust the gain of the signal depending on their current needs which may change with the conditions of the overall system. One in the art would have been particularly motivated to provide an amplifier with a dynamically adjustable gain as taught by Kosaka in the system disclosed by Walker et al. since Walker et al. already teach examining the results provided by different levels of gain and selecting an ideal gain level accordingly.

It also would have been obvious to a person of ordinary skill in the art to use a semiconductor optical amplifier as taught by Kosaka as the optical amplifier in the system disclosed by Walker et al. instead of a doped fiber amplifier as an engineering design choice of a type of widely available and well known amplifier. Kosaka specifically teaches that a semiconductor optical amplifier may be used instead of a doped fiber amplifier as an engineering design choice (column 5, lines 18-21).

Walker et al. do not specifically disclose that the optical transmitter is a wavelength division multiplexed transmitter. However, wavelength division multiplexing is generally well known in the art as a way to transmit a plurality of signals. Kosaka in particular further teach that

an optical transmitter including an amplifier as already discussed above may be used in a wavelength division multiplexed system (column 4, lines 50-53).

It would have been obvious to a person of ordinary skill in the art to specifically use the optical transmitter described above by Walker et al. in view of Kosaka as a wavelength division multiplexed transmitter as further suggested by Kosaka in order to transmit a plurality of signals as needed, and particularly so that such a plurality of signals may be efficiently transmitted over a single communication line.

Allowable Subject Matter

6. Claims 1-19, 21, and 22 are allowed.
7. The prior art, including Walker et al. and Kosaka, does not disclose or fairly suggest an externally modulated wavelength division multiplexed (WDM) optical transmitter comprising a continuous wave (CW) laser, a semiconductor optical amplifier (SOA) positioned after the laser and an external modulator positioned after the SOA with the further limitations specifically recited by claims 21 or 22, particularly wherein a bias setting of the modulator may be varied so that the modulator operates in either a normal transmission state or a different, minimum transmission state which aids in optical power attenuation of a laser transmission wavelength to reduce wavelength channel interference during periods of laser instability.
8. The prior art also does not disclose or fairly suggest a method of tuning or controlling start-up of a transmitter with all the elements and steps as specifically recited by claims 1, 8, 15, 17, 18, and 19, and particularly wherein the SOA is operated to generate a broad spectrum of amplified spontaneous emission (ASE) light output or turned down to a minimum power so as to

Art Unit: 2633

still maintain a wavelength lock, and the external modulator (positioned after the SOA) is subsequently biased to a modulator minimum transmission state.

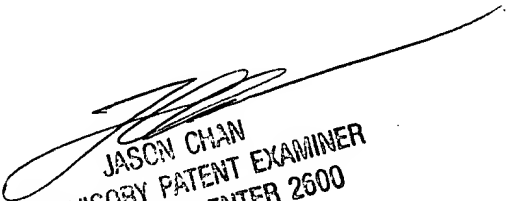
9. Examiner notes that telephone calls were made to Applicants' representative James McGraw during the week of 29 March 2004 in an attempt to expedite prosecution of this case through amending or canceling claim 20, but no decision was reached.

Conclusion

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Christina Y. Leung whose telephone number is 703-605-1186. The examiner can normally be reached on Monday to Friday, 6:30 to 3:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jason Chan can be reached on 703-305-4729. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-305-4700.


JASON CHAN
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2600